

THE
MEDICAL JOURNAL
OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated)

The Journal of the Australian Branches of the British Medical Association

VOL. II.—7TH YEAR—No. 25. SYDNEY; SATURDAY, DECEMBER 18, 1920.

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No. 25.

ANKYLOSIS OF THE METACARPO-PHALANGEAL JOINTS.¹

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The condition which forms the subject of this communication is one which is familiar to all surgeons, especially to those who have been concerned in the treatment of war injuries.

The term ankylosis is employed by English surgeons to indicate a condition of bony or firm fibrous ankylosis in which there is no movement of the joint. French surgeons, on the other hand, employ the term to indicate all degrees of interference with the movements of a joint, from the slightest diminution of movement in one direction only to complete absence of all movements. In this paper, in order to avoid the rather clumsy term limitation or restriction of flexion, the word ankylosis has been employed in the sense in which the French surgeons use it.

Clinical Appearance.

The whole hand in marked cases is thin and wasted, the skin is moist, smooth and atrophied and liable to pressure sores. The affected metacarpophalangeal joints allow hyperextension of the fingers, but little or no flexion. Lateral movement at these joints is more limited than normal. On endeavouring to flex the fingers passively, the heads of the metacarpal bones and the bases of the phalanges separate, producing a small gap between the bones, indicating clearly that the limiting structure is not the posterior ligament of the joint.

One or all of the joints may be involved and in extreme cases the hand is absolutely useless, the only movement which the patient can perform being one of adduction of the thumb to the side of the hand, which constitutes his whole ability to hold anything in the hand. Sometimes the interphalangeal joints are affected in the same way.

Ætiology.

In some cases there is a wound on the back of the hand and wrist and the ankylosis is obviously due to injury to the extensor tendons, which are bound down to the carpal or metacarpal bones, the tendons then acting as long ligaments, preventing flexion.

In the majority of cases, however, the wound, if there is one at all, is at a distance, involving, perhaps, the shoulder or arm. In these cases the hand has been immobilized for some time and the fingers have been put out of action either by the use of splints extending to the fingers, or in some cases by reason of injury to one or more nerves of the brachial plexus. Often, too, there has been long-standing suppuration and the influence of infective organisms is added to that of prolonged immobilization as pointed out by me in a recent paper on this subject of latent sepsis. (1)

Of course, all conditions may be present to produce ankylosis, *viz.*: injury to extensor tendons, with adhesions to bones, immobilization and sepsis.

¹ Read at a Meeting of the Melbourne Surgical Association on August 16, 1920.

Pathology.

In order to understand the pathology of this condition, an accurate knowledge of the anatomy of the metacarpophalangeal articulations is necessary. Each joint is surrounded by a capsule, which in front is well defined and contains a small plate of cartilage; posteriorly it merges with the expansion of the extensor tendons and on each side there is a specially thickened strand of fibres known as the lateral ligaments. It is these lateral ligaments which command our attention. The proximal extremity is attached to a definite tubercle and a depression just below and in front of it on the posterior part of the lateral aspect of the head of the metacarpal bone. (Figure I.)

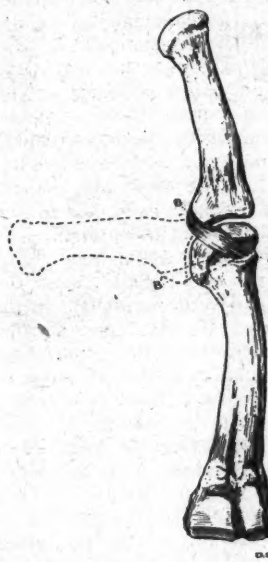


FIGURE I.
The lateral ligament AB passes downwards and forwards and so limits flexion of the joint. It is lax in extension (AB), taut in flexion (AB¹).

The ligament passes downwards and forwards and the distal extremity is attached to the anterior part of the lateral aspect of the base of the phalanx. Reference to Figure I. will show clearly that while the finger is extended and the ligament in the position "A-B," the ligament is loose, but that in flexion of the finger, where the ligament comes into the position AB¹, it becomes taut. This is further verified by the fact that in extension a wide range of lateral movement is permitted; but in extreme flexion there is little or no lateral movement of the fingers.

The lateral ligaments are the agents which limit flexion of the metacarpophalangeal joints; it is contraction of these ligaments which play such an important part and very often the sole part in the condition under discussion. Owing to the contraction of these ligaments on attempting to flex the fingers, the anterior part of the articular surface of the phalanx is pressed against the head of the metacarpal bone and, on continued attempts at flexion, all that happens is that the posterior parts of the articular surfaces are levered further apart.

Treatment.

The treatment of these cases is difficult and one is forced to admit that, up to the present, it has not been followed by very striking success. The best efforts of the masseur and the physio-therapist extended over many months often result in little or no improvement. Much can be done in the way of prevention by limiting the extent of immobilizing splints to the absolute minimum necessary, by daily massage

and movement as early as possible and by the curing of all septic processes; but, still, in spite of our best efforts in this direction, ankylosis of these joints does occur in a certain number of cases. Splints have been devised which spread and extend the fingers, but treatment by this means is slow and very often not productive of any very striking result. Some surgeons practise breaking down of the joints several times, at intervals of a couple of weeks. I cannot say that I have ever seen either any appreciable increase in the flexion at the time of the operation or any permanent improvement afterwards.

The line of treatment will be considered, firstly, in uncomplicated cases of ankylosis of the metacarpophalangeal joints and, secondly, in those cases in which there is injury to the tendons and bones, with binding down of the extensor tendons to the metacarpal or carpal bones.

Taking into consideration the pathology of this condition and the extreme degree of disablement that it produces, I came to the conclusion that the best form of treatment would be division of the ligaments by open operation. During the last nine months I have done this on many occasions. The operation consists in making a short incision, about 1.8 cm. to 2.5 cm. in length over the posterior aspect of the distal end of each metacarpal bone, corresponding to the joint involved. The skin and superficial fascia is reflected and then on each side of the extensor tendon an incision is made through the soft tissues on to the head of the metacarpal bone. The periosteum is raised forwards and distally, until the proximal attachment of the lateral ligament to the metacarpal bone is encountered. This is in part divided and in part stripped forwards with the periosteum. The same procedure is carried out on both sides of the joint and the few remaining fibres which escape division, are readily broken down. Immediately and without undue force the finger can be completely flexed. Care should be taken that both ligaments are completely dealt with; if one escapes division flexion of the finger is associated with rotation or lateral movement towards the side of the undivided ligament.

The wounds are sutured and the hand is put up on the splint shown in Figure II.. This consists of a

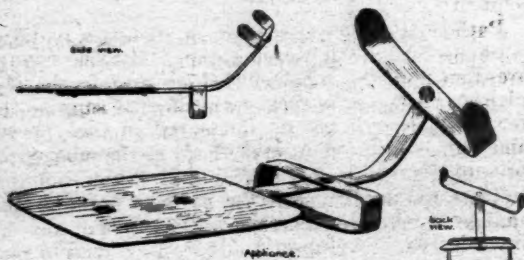


FIGURE II..

Jones's skeleton "cock-up" splint, with bar attached under the wrist.

Jones's skeleton "cock-up" splint, to which is added a bridge fixed to the wrist piece and carried about 3 cm. below the plane of the splint. The forearm and

hand are put up on this splint, preferably by means of a plaster bandage, and the fingers are maintained in the flexed position by tapes glued to each finger and attached to the wire bridge beneath the wrist. (Figure III.) A good method of fixing the retaining

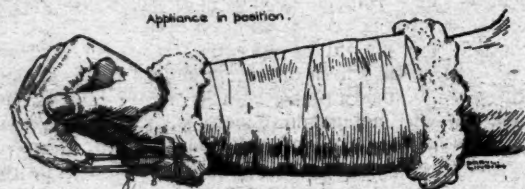


FIGURE III..

From a photograph. Hand put up with fingers completely flexed after operation.

tapes is first of all to glue cotton glove fingers to each of the affected fingers and then to run the tape through the tips of the glove fingers.

After-Treatment.

The pain is severe for about three days, but then subsides. Movement of the fingers is commenced as soon as the reaction ceases, usually in five days after operation, occasionally in three; but sometimes it may be as long as eight days. The first day each finger is moved once only through as wide a range as possible without causing pain. If there is no undue reaction this programme is carried out twice on the following day; day by day the movements are increased as the patient can bear it. After each mobilization the fingers are tied up again in flexion. About the tenth to the fourteenth day the patient can be sent to the massage department for treatment and the splint may be left off each day for a short time. As the muscles regain their function, the length of time the splint is left off is increased daily. Any diminution in the range of movement indicates that too much is being done and that the hand should be rested more on the splint. After about three or four weeks the splint may be worn at night only. A factor which influences recovery is the extent to which the extensor muscles are contracted and the flexor muscles stretched beforehand by the prolonged position of extension of the fingers. In several of my cases there was practically a complete range of passive movement, but only about 45° to 60° of active movement. In such cases it is only a matter of time before the active should equal the passive range of movement.

I would emphasize two factors which are essential to success: firstly, the operation should be performed neatly and cleanly and with an absolute minimum of trauma; secondly, the surgeon must give the after-treatment his daily personal attention.

I shall consider now the second class of case, *viz.*, those in which there is injury to the tendons or bones of the hand. I may say at once that these are very difficult cases to deal with, especially those in which there is loss of substance of a metacarpal bone, with apparent shortening of the finger. In several such cases I have been unable up to the present to produce much increase in the range of movement.

There are many cases, however, in which the extensor tendons are damaged and adherent to the carpal or metacarpal bones and surrounding tissues. These call for considerable patience and judgement on the part of the surgeon for their successful treatment. The problem is whether the tendons and joints should be dealt with at the one time, or whether they should be operated on at different sittings and, if so, which operation should be performed first, the tenoplasty or the division of the lateral ligaments of the metacarpo-phalangeal joints. I am of the opinion that the operation should take place in several stages, the tendons first of all being repaired and later the joints dealt with. If there is much scar tissue on the back of the hand, it may be necessary first of all as a preliminary operation to transplant a pedicled flap of skin and subcutaneous fat from the abdomen on to the back of the hand after excision of the scar and at a later date to perform the tenoplasty. In repairing the tendons considerable difficulty may be encountered and it is often necessary to perform a tendon transplantation in order to provide each finger with an extensor tendon.

The operation on the joints should be carried out when the tendons have regained their function and are working well, generally about three months later.

Results.

The results obtained by this operation are most encouraging in the uncomplicated cases. Necessarily, much depends on the length of time the condition has lasted and on the state of the muscles. The improvement in the general condition of the hand is striking; the skin loses its shiny, atrophic appearance and approaches the normal condition and the nutrition of the whole hand improves. As regards the function of the hand, in several cases it has been completely restored and the affected hand made practically as good as the other one. In several other cases the improvement has been very marked and quite a useful hand has been restored from one in which there was absolutely no grip and which was practically useless.

One man was wounded in 1916 and had been receiving a pension for complete incapacity. He had no flexion whatever in any of his fingers. At the end of six months he had passive flexion at the metacarpo-phalangeal joints to 90° and active to 60°; he had a strong grip and a very useful hand, so useful, in fact, that he was able to return to his work in the mercantile marine and obtained a position as second officer on board a steamer trading to the East.

The results obtained in cases in which the tendons are injured vary with the severity of the damage done to the tendons; but in all cases the hand can be improved, sometimes to a very marked extent.

When the carpal or metacarpal bones are injured, especially if there is loss of substance, the prognosis is still less favourable.

Reference.

- (1) Shaw: "The Application of Military Surgery to Civil Practice," *The Med. Journ. of Aus.*, January 17, 1920.

RENAL EFFICIENCY AND HYPERGLYCÆMIA.

By L. A. Ivan Maxwell, M.B., B.S., M.Sc.,
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Introduction.

The normal percentage of sugar in the blood of healthy persons is subject to some variation, depending upon:

- (1) The amount and nature of the food ingested.
- (2) The time interval between the ingestion and the blood analysis.
- (3) The rate of conversion of glucose into simpler or more complex substances in the body.

MacLean regards 0.11% as an average figure and many other observers give figures of a closely similar nature.

Owing to faulty carbo-hydrate metabolism there occurs in *diabetes mellitus* a condition of hyperglycæmia. Long-continued hyperglycæmia has been regarded by Naunyn, Pflüger, Pavy and others as responsible for injurious effects upon tissues and hence some of the complications of diabetes. This view is challenged by Allen, who showed that repeated injections of sugar into a cat over a period of seventeen months in sufficient quantity to cause hyperglycæmia gave rise to no toxic symptoms.

Hyperglycæmia in diabetics, however, must be looked upon as one manifestation—and one only—of a general disorder of metabolism, which involves not only the carbo-hydrates, but also fats and to some extent the proteins. Hyperglycæmia may lead to glycosuria, but obviously the elimination of glucose by the kidneys will depend upon the functional efficiency of these organs.

The threshold of renal permeability for glucose is stated to lie between 0.15% and 0.18% for the normal kidney. If the products of perverted metabolism injure the kidney and diminish its permeability—a point to be investigated in this research—this will be an additional factor in maintaining the hyperglycæmia. A person with diminished renal permeability may be suffering from hyperglycæmia and yet show no glycosuria. Myers and Bailey report hyperglycæmia of 0.19% to 0.8% in a series of diabetics with nephritis. Hagelburg found an increased blood sugar in a series of cases of arterio-sclerosis and nephritis.

Pathologists have described in diabetics a diffuse nephritis with fatty degeneration. Hyaline changes are found in the tubal epithelium and in the Malpighian tufts. It is then reasonable to suppose that renal efficiency might be subnormal in such persons and this contention is upheld by the results of the present research.

The question as to whether in diabetes there was a change in the concentration of the blood was also investigated. Polydipsia would in itself tend to cause dilution of the blood stream, whereas polyuria would tend to cause its concentration. Mosenthal (American Society for Clinical Investigation) concludes that the body has a tendency to increase the water of the blood as the sugar rises. Kozawa, on the other hand, has shown that in diabetic hyperglycæmia the volume

of corpuscles increases as compared with plasma and as the human red corpuscles are freely permeable to glucose this result must be due to polyuria diminishing the volume of circulating plasma, *i.e.*, concentrating the blood. An attempt was made to elucidate which of the above views is correct.

The problem was studied in two ways:

- (a) The total solids of the blood was determined gravimetrically.
- (b) The relative concentration of the serum in the different cases was determined by observing its refractive index.

A further point investigated was the total fat and lipid content of the patient's blood. The method adopted allowed only of the demonstration of lipæmia of considerable extent.

Technique.

Blood Sugar.—The determinations were made by MacLean's method. The samples (0.2 c.cm.) of blood were obtained from the patient's ear some four hours after breakfast or during starvation. The preliminary heating of the blood and coagulating fluid was always performed within half an hour and usually within a few minutes of collecting the samples.

Renal Efficiency.—This was estimated by the phenolsulphonphthalein method of Rowntree and Geraghty, a Duboseq colorimeter being used. The determinations were made at the same time as the blood sugar analyses. Investigations on trench nephritis showed this method to give more reliable information with regard to the condition of the kidney than the estimation of the amount of albumin in the urine or the presence of casts.

Blood Solids.—A special micro-balance (the "Lonsdale" balance, of Messrs. Felton, Grimwade & Co.), graduated in milligrammes and accurate to half a milligramme, was used. The blood was obtained on tared absorbent paper and immediately weighed, the balance being at the bedside, so that no loss occurred due to evaporation. The paper with blood was then suspended in a weighing bottle and removed to the laboratory and heated in an electric desiccator

regulated at approximately 105° C. till constant weight was obtained.

Blood Fat and Lipoid were determined by washing the desiccated blood-stained paper in dry ether (containing CaCl_2), drying at 105° C. and re-weighing.

Refractive Index.—The blood was collected in a small tube, then corked and allowed to coagulate. The clear serum was pipetted off and the refractive index determined by an Abbé-Zeiss refractometer.

Discussion of Results.

Renal Efficiency.

If we regard 60% to 80% excretion of phenolsulphonphthalein as the normal for two hours, it will be observed that 14 persons of 24, *i.e.*, 58%, showed deficient excretion.

Hitherto authors have taken, in the absence of specific renal tests, a normal blood pressure and the absence of albuminuria as criteria of renal efficiency in diabetes. In the above series, however, the average blood pressure of those showing renal inefficiency was 128 mm. Hg.—quite a normal figure—and only in six cases was albuminuria present, so that, judged by ordinary standards, one-half of those shown to be inefficient would have passed as normal.

Of those showing renal inefficiency, all exhibited hyperglycæmia except Nos. 9 and 12.

It is not, however, contended that hyperglycæmia, *per se*, is responsible for toxic changes in the kidneys; the metabolic disorder in diabetes is too complex to give justification in singling out excess of glucose as the only cause of toxic complications. Indeed, several patients in the above table show normal renal excretion when hyperglycæmia was present, which is in agreement with the views of Allen, quoted above.

The point to be emphasized is that, so far as these experiments are concerned, in a large percentage of diabetics there is renal inefficiency. Joslin states that, although many of his patients are discharged "sugar-free," they still have hyperglycæmia.

Again, he says: "Repeatedly severe cases of diabetes take an extremely favourable course and ultimately prove to be mild. One would expect that such

No.	Age.	Blood Pressure, m.m. Hg.	Total Solids.	Fat and Lipoid.	Blood Sugar.	Refractive Index of Serum.	Phenolsulphonphthalein Excretion.	Albuminuria.
							First Hour. Second Hour. Total.	
1	34	165	22.7	0.9	0.20	1.3480	27.8 27.0 54.8	Present
2	65	140	23.5	1.0	0.19	1.3488	15.0 18.5 33.5	Present
3	50	165	22.5	1.6	0.22	1.3480	27.4 22.9 50.3	Present
4	55	140	21.1	0.7	0.26	1.3471	— 47.5 47.5	Present
5	70	120	20.3	0.7	0.12	1.3483	30.7 39.1 69.8	Present
6	51	118	17.6	1.0	0.11	1.3485	46.0 23.8 69.8	Absent
7	60	120	19.0	1.0	0.26	—	19.8 8.1 27.9	Present
8	40	120	23.5	0.9	0.37	1.3513	44.0 22.0 66.0	Absent
9	60	140	20.2	0.5	0.11	1.3515	25.8 7.0 32.8	Absent
10	65	110	16.0	0.9	0.19	—	34.5 25.0 59.5	Absent
11	58	140	21.1	0.7	0.39	1.3487	49.8 12.7 62.5	Absent
12	24	113	21.8	1.1	0.12	—	9.4 14.3 23.7	Absent
13	64	114	19.1	0.5	0.16	1.3489	33.3 15.1 48.4	Absent
14	59	110	24.4	3.3	0.34	1.3501	32.6 12.8 45.4	Absent
15	53	125	22.5	1.4	0.14	1.3514	35.7 30.6 66.3	Absent
16	67	106	22.6	2.4	0.32	1.3504	0.5 46.9 47.2	Absent
17	43	125	20.3	0.8	0.50	1.3499	24.2 22.0 46.2	Present
18	30	120	19.7	0.8	0.10	1.3495	46.8 30.0 76.8	Absent
19	63	130	—	—	0.49	—	50.0 25.0 75.0	Absent
20	23	145	23.1	0.5	0.32	1.3530	40.6 15.9 56.5	Absent
21	48	112	26.1	0.6	0.15	1.3520	37.0 25.0 62.5	Absent
22	13	110 ?	22.2	1.1	0.49	1.3495	34.0 16.0 50.0	Absent
23	46	102	21.5	0.6	0.16	1.3487	46.8 22.7 69.5	Present
24	18	104	22.9	2.3	0.39	—	34.1 28.9 63.0	Absent

cases should show a particularly low percentage of blood sugar. Such, however, is not the fact, for in many instances in my series the blood sugar was high, even though the patient was sugar-free."

It is to be observed, however, that if such patients have a blood sugar above, say, 0.15%—the approximate limit of the renal threshold—then they probably possess kidneys of deficient permeability.

This is well illustrated in No. 14. The patient, on admission to hospital, had marked glycosuria and blood sugar 0.34%, i.e., more than three times the normal. Systolic blood pressure 110 mm. Hg. and no albuminuria. With starvation the urine became sugar-free and the diet was gradually increased to 1,200 calories per day without the appearance of glycosuria.

A blood sugar estimation now showed 0.27% glucose; much above the threshold of normal renal permeability and yet there was no glycosuria. This was readily explained, however, when the renal excretion showed only 47% phenolsulphonophthalein output for two hours, despite the fact of normal blood pressure and no albuminuria. Thus, if a determination of the blood sugar is to be of value in prognosis in diabetes, an estimation of renal efficiency is also necessary.

Phenolsulphonophthalein excretion is usually considered to be a test for efficiency of the renal tubules, although Cushny inclines to the view that it passes through the glomeruli.

Glucose probably passes through the glomeruli almost exclusively.

Glomerular and tubular changes are, however, both described in the kidney associated with diabetes and hence in considering diabetic renal inefficiency the kidney should be regarded as a whole.

Total Blood Solids.

Osborne and Young found the average blood solids to be 19.7% and the refractive index of serum 1.3480 at 20° C. in a series of determinations upon healthy subjects.

In the table above it will be found that the average total solid content was 21.5% and the refractive index 1.3497 at 20° C.

In other words, 84% of these diabetics showed a raised refractive index and 78% an increase of total blood solids. Both methods then reveal that there had been a concentration of the blood, presumably due to desiccation caused by excessive polyuria.

A careful survey of the figures shows that the total solids and refractive index do not always run in parallel series. This is only to be expected, for the total solids, apart from polyuria and polydipsia, which will affect in an antagonistic manner both solids and refractive index, depend largely upon the presence or absence of anaemia, e.g., patient No. 7 had a count of 3,000,000 red corpuscles per cubic millimetre and patients No. 6 and No. 10 were extremely anæmic in appearance. Anaemia, however, will not directly affect the refractive index of serum, except, perhaps, in some forms of chlorosis, which need not here be considered. Again, albuminuria will influence both refractive index and total solids.

In patients Nos. 1, 3 and 4 the refractive index is

normal or subnormal and yet the total solids are raised.

In each case, however, albuminuria existed, which would tend to lower the refractive index of serum, whilst the concentration of the blood due to polyuria would increase the total solids and would outweigh the loss of serum protein, owing to the fact that red corpuscles contain, approximately, three times as much solids as serum.

Fat and Lipoid.

No claim can be made to great accuracy in these determinations, as the balance used was only correct to half a milligramme. The special point of interest was that in no case was there very gross lipæmia, although some degree of lipæmia was shown in patients Nos. 14, 16 and 24.

Conclusions.

(1) Renal inefficiency was present in 58% of the diabetics examined.

(2) In cases of hyperglycæmia blood sugar determination should only be interpreted in the light of renal efficiency examinations.

(3) In about four-fifths of the diabetics investigated concentration of the blood had occurred, as shown by increased total solids and raised refractive index.

(4) Lipæmia was not a marked feature of the series of cases described.

I take this opportunity to thank Professor W. A. Osborne for his kindness in placing his laboratory and apparatus at my disposal.

My thanks are also due to the honorary medical staff of the Melbourne Hospital, who gave me access to their various wards.

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Reports of Cases.

TYPES OF ACUTE CHOREA (SYDENHAM'S).

By G. C. Willcocks, M.C., O.B.E., M.B. (Syd.),
M.R.C.P. (Eng.),
Sydney.

The following seven cases of Sydenham's chorea illustrate the variety of forms this disease commonly takes and they also outline the symptoms and signs which occur most frequently in that disease. The cases were selected from among those seen and treated at St. George's Hospital and Great Ormond Street Children's Hospital. The first four patients were admitted to hospital before they came under my notice, the last three were seen as out-patients and treated as such, mainly because there was not sufficient bed space available to admit them.

Chorea Insaniens or Maniacal Chorea.

CASE I.—Girl, aged 17, was "ill for three weeks" at home with chorea. The disease began with slight, irregular movements of the left hand and arm; later the face twitched and the movements occurred in both arms and legs. The left

side had been "paralysed" for two days. The patient had not spoken for one week.

Past History.—She had not had chorea before. She had been a nervous, excitable girl all her life.

Present Condition.—The patient was a well-built, well-nourished girl. Lying on her back, she constantly moved her right arm, face and head and occasionally her right leg in an irregular, jerky fashion typical of chorea. She did not move her left arm or leg. She could not speak, but opened her mouth and apparently tried to respond to questions. When asked to put out her tongue, she darted it out and in again, in the peculiar manner so commonly seen in the severer cases of this disease. Her temperature was 37.5° C., her pulse-rate 90 and her respirations 18. The nurses stated that she moved her left arm and leg at times, in conjunction with general twisting movements of the body. The reflexes were normal, except the left knee-jerk, which was absent. The apex beat of the heart was in its normal position. No murmurs were heard.

She was treated with 0.9 grm. doses of bromide of potash and 0.3 grm. doses of chloral hydrate three times a day for two days. She became much worse. The movements of both arms, legs and face and the twisting movements of the body became almost constant, though the patient could be persuaded to take medicine and some soft foods. She cried out frequently in a high-pitched voice day and night, did not sleep at night and appeared not to recognize anybody. The pulse-rate rose to 110 and the temperature to 37.7° C. She was transferred to an isolation ward and treated with choretine (0.3 grm.) in *emulato petrolii*. She did not improve; indeed, her facial appearance became that of a mad woman; her hair was matted and sordid on her lips. The pulse-rate rose to 120. Hypodermic injections of morphine (0.0125 grm.) were now given every six hours and the patient slept for the first time.

From this time the movements gradually became less under treatment with choretine and morphine as above, the choretine being increased from 0.3 grm. three times a day to 0.3 grm. every three hours.

The patient became very drowsy after one week in hospital, and choretine was omitted for one day; but the movements and excitement recurred in a few hours, only to subside again under the influence of choretine. There was no fever from this time onward.

The patient did not pass urine for about 72 hours after admission and the bladder was palpable on the third day about 5 cm. above the pubes.

At the end of fourteen days there were only slight, occasional movements of the hands; the tongue still darted in and out quickly when voluntarily protruded and the hands could not be voluntarily kept still, but were held in the position of extreme extension of the fingers, with dorsiflexion. This position occurs in athetosis of children and is very difficult to mimic.

Choretine was diminished to 0.3 grm. three times a day and the patient transferred to the general ward again, where she immediately became excited and had to be carefully screened off from the other patients.

In another week the movements had entirely ceased and the patient could articulate single words to the accompaniment of much facial contortion and grimacing. It was not for another three weeks that she could speak sentences properly.

During the course of the disease the patient developed a soft, systolic murmur at the apex of the heart, not conducted towards the axilla. The pulse-rate was 84 and was not much increased by slight exertion.

The patient was discharged at the end of nine weeks in hospital, very thin, but feeling well. She was still very excitable and nervous. She had full power of all her limbs. The systolic murmur at the apex remained *in statu quo*, the apex beat being within the nipple line. It was thought probable that this murmur was not an indication of chronic endocarditis.

Paralytic Choreia.

CASE II.—A girl, aged 14, was said to have had irregular movements of face and hands for two weeks.

Past History.—She had had chorea badly three years previously.

Present Condition.—She was a very pale, quiet child, show-

ing slight, irregular, quick movements of both hands. She was unable to speak, but opened her mouth and tried to respond to questions. Her temperature was 37.2° C., her pulse-rate 80 and respirations 20. The apex beat was in the sixth space, 3.75 cm. outside the nipple line. There was a harsh systolic murmur conducted out to the angle of the scapula (mitral disease).

She was treated with choretine (0.3 grm.) three times a day. At the end of 14 days movements ceased entirely and the patient became quite flaccid and apparently unconscious of her surroundings. Choretine was omitted, but the patient remained in this condition for four days. During the greater part of the time she did not appear to be asleep, but lay quite still, sometimes with her eyes open and sometimes shut. She took food in very small quantity. Her temperature rose to 38.3° C. An area of dulness, diminished breath sounds and a few crepitations were discovered at the base of the left lung. There was also a profuse vaginal discharge containing streptococci. The vaginal discharge was treated by douching.

On the fifth day the fever abated and the patient became more conscious of her surroundings. On the following day there was some slight twitching of the face and hands. Choretine (0.3 grm. three times a day) was resumed for three days; the movements ceased and choretine was discontinued. She gradually regained strength, with no recurrence of symptoms and was discharged to a convalescent home four weeks after admission to hospital.

The heart condition remained the same, but there was no abnormality to be detected in the left side of the chest, the signs above mentioned having apparently been due to an area of collapse in the lung.

This patient was readmitted three months later with slight choreic movements. She was put to bed and treated with 3 decigrammes of choretine three times a day. The movements ceased in two days and the patient was discharged at the end of three weeks.

Mild or Simple Choreia.

CASE III.—This patient was a girl, aged 8 years. Her mother said that she "had peculiar movements of the right hand and arm and twisting up her face" for one week.

Past History.—She had had chorea two years before, approximately.

Present Condition.—She was a pale child, with slight movements of the right hand and arm and occasional facial grimaces. She stated that she felt well.

She was treated in bed with choretine (0.3 grm., three times a day) for three days and the movements ceased. Choretine was then intermitted, but the movements recurred slightly after one day. Choretine was resumed for four days and the movements ceased entirely.

This child had no difficulty in talking and no other symptoms of interest, except a curious cardiac condition. The apex beat was 3.75 cm. internal to the nipple line. Pulsation was evident for about 3.75 cm. to the right of the sternum and cardiac dulness corresponded to these appearances. There was no murmur and no other apparent abnormality in the cardio-vascular system. The pulse-rate varied from 80 to 100.

It was thought that there must be some adhesion pulling the heart over to the right. An X-ray examination by screen and by plate was carried out in both the antero-posterior and lateral positions. These showed displacement of the heart to the right, as anticipated, but there was no evidence of disease in the lung or pleura or in the anterior or posterior mediastinum. The child developed whooping-cough before any further examination could be made and was removed to another hospital. The cause of this condition was therefore not ascertained.

Mild Choreia.

CASE IV.—The patient was a girl of 6 years, who "had twitchings of the hands, commencing in the right hand," and had "dropped things" at home. She had been sleeping badly and was very excitable. She was so excited if she played games that she became exhausted.

Past History.—She had not had chorea or rheumatism.

Present Condition.—On admission, the patient was a pale girl, fairly well nourished, with slight, irregular movements of her hands and arms, worse on the right side. She frowned

occasionally. She did not answer questions and appeared to be surly. The apex beat of the heart was in the nipple line. There was a soft, systolic murmur at the apex, conducted outwards for about 5 cm. The pulse-rate was 96.

She was treated with chloretone and rest in bed. The movements ceased completely in five days. The patient was allowed up after eighteen days. The systolic murmur still remained at the apex and the apex beat was in the nipple line, but was not forcible.

She was sent to a convalescent home after five weeks in hospital. The heart condition remained unaltered. The pulse rose fifteen beats per minute on slight exertion. Carditis was diagnosed in this case.

Hemichorea.

CASE V.—The patient was a girl of 11 years. Her mother said "her left arm had been weak for about ten days." She could not use a fork with it.

Past History.—She had had no previous attack of chorea or rheumatism.

Present Condition.—The patient was a healthy-looking girl. When she came to the hospital she had her left hand in the pocket of her coat, appeared to limp slightly and tended to drag the left leg. The tongue showed irregular twitching movements when protruded. The grip of the left hand was not as strong as that of the right and twitching movements could be felt as the patient tightened her grasp. When asked to put her out-stretched hands flat on the table, she could not keep either of them quite still. The cranial nerves and the reflexes were normal. The heart was normal.

She was treated with aspirin (0.6 grm.) three times a day. She was advised to remain away from school and to rest as much as possible. After one week she was much improved under treatment and was apparently quite well after three weeks. She was advised to stay away from school and to remain under observation for three months. At this stage we lost sight of her.

Hemichorea.

CASE VI.—The patient was a boy of 6 years. His mother said that he "kept dropping things" out of his right hand. His face did not twitch. He had always been an excitable child.

Past History.—No information of importance was elicited.

Present Condition.—The patient was a small, pale child. He did not use his right hand, but could use it when requested. He had very little power in the grip of his right hand. On holding his hands smartly above his head his right hand rotated and the palm of the hand faced outwards (pronator sign of unilateral chorea). The reflexes were normal. His tongue was not protruded steadily, but showed constant flickering movements. His heart was normal.

He was treated with aspirin (0.6 grm.) three times a day. This child rapidly regained the use of his arm and hand and in two weeks appeared to have recovered physically, but he was still excitable and bad tempered. He slept badly and slept late in the morning, thus annoying his mother. These symptoms improved markedly by keeping him from school and letting him sleep as much as he wished. Aspirin was continued for four weeks. There appeared to be no cardiac involvement.

Severe Chorea.

CASE VII.—The patient was a girl of 5 years. She had been under treatment for chorea for one month as an out-patient. She had been given *liquor arsenicalis* (0.18 mil) three times a day. No improvement was noted.

On admission, marked irregular movements of both arms and face were noted. She walked clumsily and stumbled. The apex beat of the heart was in the nipple line. There was a soft, systolic, apical murmur.

She was treated as an out-patient, as no beds were available. She was given chloretone (0.3 grm.) three times a day and was advised to remain in bed at home and to return in one week. When she returned the movements were constant and general. There was no improvement.

She was admitted to hospital and treated with chloretone (0.3 grm.) three times a day for one week. The movements disappeared and the child was discharged at the end of one month to the out-patients department. The systolic murmur at the apex remained, but appeared not to be definitely

organic. The apex beat was in the nipple line, the murmur being confined to the region of the apex. The heart-rate was only slightly increased by moderate exertion.

Ætiology.

Five of these cases occurred in the spring. The patients were all between the ages of 5 and 17. Six were females; three had always been excitable in temperament; two had suffered with chorea before. I have not dealt with a history of rheumatism, as it seems generally accepted now that even the slightest pains in children may be due to rheumatism and may be followed by definite carditis. None of these children had had rheumatic fever as an acute prostrating illness. The symptoms in these cases range widely from the mildest to the most severe.

The physical signs mentioned are the common ones. The irregular movements of the protruded tongue and of the out-stretched hands are of assistance in differentiating chorea from conditions such as tic, *poliomyelitis acute* and mere "fidgets."

The frequent occurrence of heart murmurs is in accordance with the usual findings, and the persistence of the murmur in three cases may have indicated the commencement of organic lesions. In only one case was there definite chronic valvular disease with classic signs.

Diagnosis.

In the diagnosis none of these cases presented much difficulty, but cases are frequently seen in which there is doubt as to the diagnosis between chorea, tic or fidgetiness. Sometimes the history alone gives an indication, but it is well to bear in mind that the characteristic of choreic movements is irregularity in time, place and extent. Choreic movements are not repeated.

Prognosis.

Consideration of the prognosis shows that two of the patients recovered, temporarily at any rate, under out-patient treatment. It is probable that more than two out of seven patients are treated in the out-patient departments of the children's hospitals in London.

Five patients had to be admitted to hospital; they recovered with rest, chloretone and, in one case, morphine.

Death in the maniacal cases is not unusual, though I have only seen two such cases; they were in Sydney in 1912 and 1913.

Treatment.

Rest and quiet (physical and mental) appear to be the first essentials. Good food, of course, is needed, but if the patients are really ill, they cannot take much. Of drugs, the arsenic recommended by the older writers seems to have gone out of fashion in England, where it is said by some that this drug caused more cases of arsenical neuritis than cures. Chloretone (0.3 grm. three times a day or more, up to 0.3 grms. every four hours) is commonly used and on it patients seem to get better with no apparent ill effects. Aspirin (0.6 grm. three times a day) has been used for some time and has acted well in some hands. The drug is used on the assumption, which some hold to be proved, that the disease is due to the organism of rheumatic fever. I have never seen the dose of six decigrammes three times a day produce harmful effects in these cases.

New modes of treatment are discussed in the *Medical Annual* for 1920 by Dr. Langmead. These include intravenous administration of "914," intravenous injection of an autoserum from the patients' own blood, intensive administration of strychnine and re-education beginning in the acute febrile stage.

Dr. Langmead is not an advocate of any of the above new methods of treatment.

Reviews.

ANATOMY.

While largely sympathizing with the aims of the author of "The Fundamentals of Human Anatomy (Including its Borderland Districts: From the Viewpoint of a Practitioner)," we fear that his statement: "My confidence in the aims of this book is greater than my faith in the perform-

ance," is borne out by a careful study of its pages.¹ Marsh Pitman, Professor of Anatomy in the Dental Department of Washington University, St. Louis, has endeavoured to write an anatomy book with the following aims as set out in his preface: (i.) the elimination of too much detail, as far as possible, in order to avoid the mental indigestion so often found amongst students of anatomy; (ii.) by attacking the subject from all points of view (e.g., pathological, surgical, histological, physiological, etc.) to add to its value and vividness of presentation; (iii.) to help the memory by a logical correlation of ideas, where possible, especially between structure and function.

Professor Arthur Keith has recently expressed a very definite view in regard to the essentials of an ideal book for students. "The time has come when a clear distinction must be drawn between the student's textbook and the work of reference. As times goes on the difference between them must become greater and greater. The greatest sinners in this respect are the anatomists and physiologists; their textbooks could be reduced by half, with an improvement in the education of the man who is to practise general medicine." The author has been even more ambitious; he has attempted to make his book serve as a dissecting manual. A freshness of the manner of presentation is one of the most pleasing characteristics, e.g., in the description of the orbital fascia, the facial muscles, the diagrams of the nerves and arteries of the limbs, the correlation of histological structure with function, and so on.*

The book is divided into seven short chapters on systemic anatomy and six larger chapters on regional anatomy and dissection instructions. The text is marred by many inaccuracies of description, language and orthography, as well as by many statements of a decidedly controversial or even imaginative character. For example, in Figure 15 the left clavicle should be the right clavicle. A similar mistake occurs in Figure 30. The derivation of humerus is given as "humerus = funny"! The hypophysis or pituitary body is described as being roughly about "a quarter of an inch in all diameters"; normally it is much nearer or more than half an inch in all diameters. The lachrymal (incorrectly spelt "lacrymal" throughout) glands are described as averaging about "one-eighth times one-quarter times one-half inches in diameter." There are hundreds of such inaccuracies or controversial statements. Random examples of the latter are: (1) That the *portio minor* (or motor root) of the trigeminal nerve springs from the facial nerve nucleus in the brain stem (p. 325). This is usually considered to spring from a nucleus of its own, separate from the facial nucleus, though possibly in series with it. (2) Great size and a forward projection of the nasal bones is said to be a racial characteristic of the Jewish peoples. It is usually held that what has been called the "nostrility," or curl of the alae or wings of the nose was more characteristic (cf. Ripley and Jacobs). These are but two examples chosen almost at random from a large stock of improbable statements. The standard of this work departs markedly from that set by the best American anatomists and clinicians.

While sympathizing with the author's aims, we are forced to the conclusion that the book is unsuited for the student, owing to the numerous inaccuracies and unacceptable views. Many portions of the work are interesting and deserving of attention by an anatomist competent to pick out the wheat from the tares.

THE TREATMENT OF GONORRHOEA

The second edition of Norman Lumb's "Systematic Treatment of Gonorrhoea in the Male" follows its predecessor at an interval of two years.² The object of the author has been to assist the official campaign against venereal disease by providing a small volume of practical directions suitable for the use of those who may be assisting at treatment centres and whose opportunities for gaining experience in the past have been somewhat limited. The book is of handy

¹ The Fundamentals of Human Anatomy, Including Its Borderland Districts: From the Viewpoint of a Practitioner, by Marsh Pitman, A.B., M.D.; 1920. St. Louis: C. V. Mosby Company; Royal Soc., pp. 356, with 101 illustrations. Price, \$4.

² The Systematic Treatment of Gonorrhoea in the Male, by Norman Lumb, O.B.E.; 1920. London: H. K. Lewis & Co., Ltd.; Crown Soc., pp. 123. Price, 6s. 6d.

size and the subject is treated clearly and succinctly on more or less orthodox lines. The author has a profound belief in the value of vaccines both in the acute and in the chronic stages of the disease. He is convinced that they not only prevent extension of the inflammatory process, but also materially assist nature in effecting a cure. The commoner complications are described, together with their appropriate treatment.

The present edition does not differ greatly from the first, but in conformity with advancing knowledge some space has been given to the consideration of detoxicated vaccines which have recently been introduced by Thomson and to the use of colloidal metals as recommended by McDonagh. The author regards both these forms of treatment as still in the experimental stage.

A useful chapter is included on the psychology of the gonorrhoeal patient, in which attention is drawn to the importance of combating any tendency to introspection. A standard of cure is described to which the patient should conform.

A final opinion involves the macroscopical, microscopical and cultural examination of the urine and of the prostatic and vesicular secretions and urethroscopic inspection of the urethral mucosa.

It is gratifying to note that reference is also made to the value of the gonococcal complement fixation test as one of the criteria of cure. The book may be recommended to those requiring a short, practical directory of treatment on modern lines.

THE DEPARTMENT OF PHYSIOLOGY AT SYDNEY.

The Chair of Physiology at the University of Sydney was rendered vacant by the death of Sir Thomas Anderson Stuart on February 28, 1920. In the interval Dr. H. Priestley, Assistant Professor of Physiology, has been conducting the work temporarily. The Senate invited physiologists in Australia and in England to apply for election. A number of highly qualified scientists sent in their applications to the selection committee in London. One of the candidates has an immense advantage over all others in that he has served under the late Professor from 1905 to 1918, when he was appointed Professor of Pharmacology. In addition to this advantage, Dr. H. G. Chapman possesses another qualification for the position which gives him preference over his competitors. His reputation as a bio-chemist is second to none in Australia. It is therefore highly gratifying and not in the least surprising that the Senate has selected Dr. H. G. Chapman as Professor of Physiology of the University of Sydney.

The Senate or those empowered to advise this body have appointed Dr. H. Priestley Associate Professor of Physiology. We regard this appointment with satisfaction, since it indicates a bending of the authorities in the direction of a separation of medical chemistry from medical physics. The appointment of Dr. Priestley as second in charge with plenary powers during the absence of the Professor of Physiology will meet with the approval of all who advocate Australian teachers for an Australian University.

We learn that Mr. Sol Green has promised to give the sum of £5,000 to the Alfred Hospital, Prahran, toward the appeal, on the condition that the total amount collected reaches £51,000. Up to the present £10,000 has been received and promises of various sums aggregating £12,000 have been given. In order to secure the generous offer of Mr. Green it will be necessary to collect a further £29,000.

We regret to record the death of Dr. William Andrews, which took place at "Helvetia," East Melbourne, on December 2, 1920.

Cloth cases for binding *The Medical Journal of Australia* of standard pattern and with standard lettering can be supplied at four shillings each. Orders should be sent in to the office of this *Journal* as soon as possible, in order to insure delivery early in January.

The Medical Journal of Australia.

SATURDAY, DECEMBER 18, 1920.

The Cost of Medical Education.

It is proverbial that when the blind leads the blind, the destiny of both is in the lap of the gods. The result of persistent and oft-times extreme sweating has been to provoke retaliation. In the past the unskilled manual worker has received a wage determined by a system of competition and of barter. The employer found men willing to accept small recompense, because the market price of labour was governed by the economic value of output. As long as commodities remained cheap, the worker was able to live in relative comfort, provided that he displayed a reasonable amount of diligence. With the growth of power of the labour party came the introduction of combined effort to force the worker's wages upwards, so that those who were responsible for the organization of the industries and for their financial success or failure, would be compelled to share their profits but not their losses with the men carrying out the various manipulative processes in the productive or distributive industries. The inevitable occurred, since the amount of wage was not based on the commercial value of the work performed. Prices went up; the workers claimed more on this account; prices went up again; until the community became accustomed to a regular alternation. The vicious circle was intensified by the institution of basic wages by reputedly responsible governments. No one can foretell how long this game of see-saw can continue. Sooner or later, perhaps very soon, the economic machine must break down under the unnatural strain. While the struggle is proceeding, a struggle well known in history, between capital and labour, the most valuable asset of humanity is at a premium. The worker's wage is measured, not by the value of his work, but by the cost of living "according to reasonable standards of comfort." The highly educated man whose task is to promote progress in the many spheres of human activity, still

receives remuneration scarcely higher than that paid to unskilled and untrainable carriers of heavy weights. It is impossible to adjust the affairs of mankind equitably and rationally unless intellectual work can command a stipend proportionate to its value to mankind.

On another page we publish a report of the Senate of the University of Sydney, containing the determination to raise the students' fees. The reasons given for the necessity of raising the fees are the increased cost of living, the increased cost of materials, the increase in salaries and wages. The University recognizes the necessity of appointing more teachers. This will involve the Senate in further expenditure. The increase in the price of chemicals and other materials is probably temporary, but it is very considerable. The extra money for wages will be required until the financial crash comes. There is no commensurate increase in the fees paid to the lecturers and demonstrators in the Medical School. The position, however, has to be faced and the Senate is certainly justified in raising the fees due from students. The same expedient has been adopted in the universities of other countries. Hitherto the minimum cost of medical education at our three schools has lain between £175 and £200 for male students. The term fees at Sydney have been increased from £132 to £216. The fees for hospital practice will no doubt be increased proportionately, so that the male undergraduate in medicine will have to find about £300 for his university course. It remains to be seen whether the additional £100 will deter parents from placing their sons into medicine. It is to be hoped that the Senate will require the State Government to pay a correspondingly higher fee for the education of their exhibitioners. In theory it is an admirable arrangement that the sons and daughters of persons of small means should be enabled to study medicine if they reveal ability during their school days. In practice we find that boys and girls are granted scholarships and exhibitions on very slender pretexts. It should be impossible for a boy, after having failed to pass the leaving certificate examination, to secure an exhibition on matriculation. In our opinion the provision of a small number of exhibitions should meet the needs of the people. The practice of medicine will not be

improved by the admission of an unlimited number of bursary students. The exceptionally gifted boy or girl should not be prevented from entering the school on account of the inability of his or her parents to pay the fees. The medical profession needs every young person of exceptional scientific ability. By opening its doors to all aspirants without distinction, the medical school will certainly lower the standard of efficiency and incidentally damage the dignity and prestige of the medical profession. In addition this exaggeration of the bursary system will prove extremely expensive to the University unless the Senate is wise enough to pass on its full share of increased costs to the State Government.

AN IRRESISTIBLE APPEAL.

Years ago a gifted, seeing boy won a competition offered by a magazine and gained thereby a position on the literary staff of that publication. His enterprise and his unswerving belief in himself led him to emancipate himself from his first employer within a relatively short time. He started his own magazine, supported by several of his old comrades who recognized the compelling power of the young man. Still later, endowed with riches, successful in his calling and influential through his sound views and steady industry, this man became blind. The world has learned from Sir Arthur Pearson and from the manner in which he has established Saint Dunstan's, how the terrible affliction of blindness may be alleviated without injury to the afflicted.

In 1879 the Sydney Industrial Blind Institute was founded for the purpose of teaching the blind how to turn a grey, unprofitable existence into a happy, independent and self-supporting life. For 42 years this excellent institution has been conducted on the lines popularized by Sir Arthur Pearson. The work has been carried out unostentatiously, modestly, excellently. At first there were few to guide, few to train. Little by little the number of the blind in the State of New South Wales increased with the growth of population, until in 1911 it exceeded one thousand. The management of the institution has hitherto been able to meet the increasing demands. No blind person has been refused the inestimable benefit of industrial training suited to sightless workers. An extensive, almost priceless library of books in Braille and Moon types has been gathered for the instruction, enlightenment and amusement of the blind. Teachers are sent to any part of the State to teach blind persons how to read and how to work. No medical practitioner need be told what such an institution means to the lonely beings whose darkness is doubly dark because not one relieving ray of light is cast across their unproductive and inactive lives. This institution has brought them work and play—the great factors of human happiness.

Through the generosity and practical sympathy of kind friends the sum of £2,800 was subscribed during the year 1919 toward the expenses of this splendid undertaking. Bequests and interest provided nearly £700, while the State Government granted a subsidy of £2,340. But it costs much to provide for all the adult blind and many of the blind children of a State. The total expenditure for 1919 amounted to £22,000. The trained blind were able to produce material for their own support within the institute to the value of nearly £15,000. The increased cost of everything has for the first time compelled those responsible for this institution to appeal to the public for a substantial sum to safeguard the future. Securities are being sold to meet current expenses. This means curtailment of activities, limitation of assistance, disaster to the blind of New South Wales within a short time. Medical practitioners are noted for their generosity and large hearts. We ask our readers to send a suitable donation to the Honorary Treasurer of Industrial Blind Appeal, 11 Moore Street, Sydney, as a Christmas contribution toward one of our best endeavours to place a superb Australian industry on a sound footing. Don't pity the blind man, but help him.

GASTRIC HYPERACIDITY.

Hyperchlorhydria in its relation to disease of the stomach is a subject which has long attracted the attention of the clinician. An attempt has recently been made by Drs. Martin E. Rehfuss and Philip Hawk¹ to arrive at more definite conclusions with regard to the normal range of gastric acidity as recognized by titration. An appreciation of the normal is obviously the first essential before an endeavour can be made to formulate hypotheses relating to the abnormalities of secretion which may arise under pathological conditions.

These observers contend that much of the accepted data in regard to gastric secretion has been derived from observations made upon abnormal subjects and that sufficient attention has not been given to the great variations in gastric acidity which may be observed in individuals which are regarded as normal and in which symptoms of abnormal gastric function are absent.

From observations collected in a series of more than nine hundred patients, the conclusion has been reached that both the motor and secretory responses of the stomach to normal stimuli may show wide variation in healthy individuals. Evidence has been adduced to prove that the normal person may elaborate an acid secretion as high as that commonly associated with pathological conditions and that no increase in acidity found in disease has exceeded the figures obtained under certain conditions in health. It is stated that almost 40% of normal individuals constantly show the acid titration findings, which are usually considered to be indicative of hyperacidity; what would formerly have been regarded as a hyper-acid gastric secretion, is produced constantly in these

¹ Journal of the American Medical Sciences, September, 1920.

cases in response to the stimuli of various food-stuffs. Other individuals consistently react to food-stuffs by the production of gastric secretion of relatively low degree of acidity and belong to the hyposecretory type.

Further, it has been demonstrated that the introduction into the stomach of free hydrochloric acid in such quantities as to produce a relatively high degree of acidity (0.5% HCl) does not necessarily result in the production of symptoms and that the activity of the regulating mechanism of the stomach rapidly brings about a gastric optimum.

So constant have the findings both of increased and decreased acid secretion been in individuals exhibiting no abnormal symptoms that it would appear impossible to accept the present conceptions of hyperacidity and hypoaecidity as correct bases for deductions concerning the normal gastric secretions in health.

The syndrome recognized clinically as hyperchlorhydria cannot therefore be regarded as dependent upon a fixed percentage of acidity as measured by titration. It would appear that in the production of symptoms other influences are involved. The matter is of particular interest in relation to the pathogenesis of peptic ulcer and to the causation of pain in such conditions. It must be admitted that the factors controlling and regulating gastric secretion are at present imperfectly understood.

THE BRITISH MEDICAL ASSOCIATION IN SOUTH AFRICA.

In our issue of October 30, 1920, we published an article dealing with a resolution of the Witwatersrand Branch of the British Medical Association. This resolution was to the effect that the Branch should change its name to that of the Medical Association of South Africa, provided that it could be federated to the British Medical Association. Attached to this resolution was a draft memorandum of association. The members referred these proposals to the South African Medical Congress, Durban, 1920. On October 6, 1920, a meeting of delegates of the Branches of the British Medical Association in South Africa was held in Durban. The meeting had been convened by the South African Committee. The meeting was attended by delegates of ten Branches; Dr. J. A. Macdonald, lately Chairman of the British Medical Association, was also present. From the account of the meeting published in the *South African Medical Record* we learn that there is considerable difference of opinion among the members of the medical profession in South Africa. The views of the members of the Witwatersrand Branch or at all events of a large section of the members, have been disclosed in the discussions. The labour difficulties on the Rand have apparently tempted the medical practitioners to demand a "strong organization" to deal with the conditions of contract practice. Since the constitution of the British Medical Association does not admit of the application of coercion of its members, they are prepared to form a new association which would possess this power. Trade union

methods appeal strongly to the Rand men. It transpires that a South African Medical Association has already come into existence. This body is prepared to wind up its affairs if the proposed Medical Association of South Africa is established, as it is held that the existence of two associations would be calamitous. The former society is a local organization composed of the trade union members of the Rand district. The latter would be a real South African society. The Rand members do not hesitate to use the organization of the British Medical Association for the purpose of founding an association which, if we read their intentions aright, would be antagonistic to the British Medical Association. The delegates did not speak of the calamity of the divorce from the great association which has served the medical profession throughout the British Empire since 1832.

There was a display of considerable heat in the discussions at the meeting. The Vice-President of the South African Committee was elected Chairman, but as he ruled that the motion in the name of the Witwatersrand Branch could not be discussed, he was ultimately forced to vacate the chair. The delegates of the Cape of Good Hope (Western) Branch announced that they had been instructed not to discuss this revolutionary proposal. Others members expressed their desire to expend oratory and argument on an endeavour to arrive at a conclusion. The members with one dissentient determined to allow the Witwatersrand Branch motion to be presented. The delegates of the Cape of Good Hope (Western) Branch moved an amendment to the effect that it was not advisable at the present time to form a South African Medical Association; that the question be deferred until the next Congress and that no decisive action should be taken without the sanction of a plebiscite of the profession. The words "at the present time" were eventually changed to "at the present meeting." It is always difficult and usually impossible to gauge the opinions of a body of men assembled for the purpose of discussion from a report of the proceedings of the meeting. We refrain from assuming that the most influential and most important members of the medical profession in South Africa are either for or against the break-away movement.

That the atmosphere at the meeting was threatening and aggressive is indicated by the fact that Dr. J. A. Macdonald said that it would be manifestly improper for him to interfere in the discussion. Perhaps his well-known wisdom in counselling may be brought to bear on the waverers and on those who are prepared to listen to reason. Otherwise we fear that the British Medical Association is in danger of losing a powerful and useful section. It would be much more dignified and much wiser if the loyal members of the British Medical Association in South Africa were to allow the trade union advocates to resign their membership of the Association, even if this involved the establishment of an opposition society. An organization of medical practitioners which depends on its power to compel men to obey the dictates of extremist leaders, is unlikely to have a long or a happy existence.

Abstracts from Current Medical Literature.

SURGERY.

(193) Adenoma with Hyperthyroidism.

Charles H. Mayo (*Annals of Surg.*, August, 1920) explains that the condition of adenoma with hyperthyroidism shows pathologically no different findings from adenoma without hyperthyroidism. In 1906 Plummer first drew attention to the existence of many patients with symptoms of hyperthyroidism, but without exophthalmos, and these were found to constitute 17% to 20% of patients in whom exophthalmic goitre was diagnosed. Hyperthyroidism, therefore, may occur without diffuse parenchymatous hypertrophy and hyperplasia. The essential points are that these patients suffer from their adenoma five to ten years earlier in life than do those suffering from true exophthalmic goitre, that 14½ years is the average time interval between the appearance of a tumour and the development of symptoms and, thirdly, there is an almost complete absence of exophthalmos and gastro-intestinal crises.

E. S. Judd (*Annals of Surg.*, August, 1920) differentiates clearly cases of adenoma of the thyroid with symptoms of hyperthyroidism from true exophthalmic goitre in which there is a general diffuse hypertrophy with hyperplasia. A study of 100 consecutive cases of each disease was made and the conclusions are that 80% of patients suffering from adenoma with hyperthyroidism can be cured by thyroidectomy. Hyperthyroidism occurs in waves and loss of body weight is a valuable indicator. The mortality in patients operated on at the peak of an exacerbation of hyperthyroidism is extremely high.

(194) Fatal Post-Operative Pulmonary Thrombosis.

Albert J. Ochsner and Chester C. Schneider (*Annals of Surg.*, July, 1920) record the results of their experiences of fatal post-operative pulmonary thrombosis and review the literature on the subject. In five years at the Augustana Hospital there were eight deaths from this condition. Local infection may play a part in its causation. The majority of the eight patients showed some degree of anemia, but in none was there any slowing of the blood stream from prolonged use of the Trendelenberg position, which has been suggested as a cause. Transfusion of whole blood would be of benefit in cases where the general physical condition was subnormal, or where cachexia was present. There were no micro-organisms discovered in the blood and no excess of white cells. The authors have only recently realized the importance of inefficient haemostasis as a causative factor. Traumatization of the tissues with retractors is another probable cause. Zweifel has suggested that injury to

the veins of the extremities, due to the use of a table on which the knees are bent, plays a definite part in the aetiology. Rough handling and consequent injury to the intima of veins must be avoided.

(195) Resection of the Colon.

W. Quarry Wood quotes the high mortality of large bowel resections, even under favourable circumstances, and points out that Moynihan opposes the resection of a growth and subsequent end-to-end anastomosis in the presence of acute obstruction. The obstruction must first be relieved and subsequently the cause must be removed. In a few cases an anastomosis between the ileum and the colon below the growth may be performed. The two- or three-stage operation, after Paul and Mikulicz, is, however, superior and he prefers the three stages. In the first stage the loop of bowel bearing the tumour is brought outside the abdomen, the two limbs of the loop sutured together and a Paul's tube inserted above the growth. A week later the loop of bowel with its mesentery is removed flush with the skin and a Paul's tube placed in each end, to prevent hæmorrhage. Closure of the fecal fistula represents the third stage. The objections are the limited scope for the radical cure of malignant disease and the discomfort of a fecal fistula.

(196) The Rubber Drain in Intestinal Surgery.

D. C. Balfour (*Surg., Gynec. and Obstet.*, August, 1920) claims that the rubber tube is an important factor in successful resections from the sigmoid to the rectum. A tube 18 mm. wide, with an eye 2.5 cm. from the end, is introduced after the resection into the lower segment and pushed down towards the anus, where an assistant manipulates it till its upper end lies just below the cut end of the lower segment. The two ends of the bowel are then approximated by a heavy chromic gut suture, involving the mucous and muscular coats. The tube is pushed 7.5 to 10 cm. higher than the anastomosis and secured by a stitch placed close to the anastomosis line. The assistant exerts gentle traction until the suture line is invaginated, while the surgeon grasps the lower segment with a fine-toothed forceps. The effect resembles a small degree of intussusception; this is sutured in place. This technique gives excellent results.

(197) Carcinoma of the Stomach.

R. P. Rowlands (*Clinical Journ.*, August 11, 1920) appreciates the fact that carcinoma of the stomach, like ulcer, begins in the majority of cases on the lesser curvature, near the pylorus. As a result of this, obstructive signs appear early and suggest the diagnosis. The growth is also frequently palpable in the epigastrium and is favourably placed for resection. A growth near the middle of the stomach, whether on the anterior or the pos-

terior surface, although amenable to treatment, is liable to remain undiscovered till a late stage, because of the absence of obstructive symptoms. He refers to the "scientific and deadly delay" which laboratory methods of diagnosis entail and insists that early diagnosis is only to be made by exploration. The immediate mortality should not be more than 10% and 25% of patients have a chance of prolongation of life for five years. Less than one-quarter of the patients come to the surgeon in time to allow resection.

(198) Empyema.

Astley P. C. Ashhurst (*Annals of Surg.*, July, 1920) publishes his observations on empyema, based on an experience of 42 cases, nine of which were fatal. Suspected cases of pleural effusion should be aspirated and if the effusion is massive and purulent it should be removed by aspiration one or two days before thoracotomy. If fluid on puncture is found to be serious or sero-purulent, thoracotomy is postponed till frank pus is found, by which time adhesions will have formed and will serve to prevent collapse of the lung. The operation should be performed under local anesthesia. Post-operative irrigation is necessary only if after several months the lung shows no tendency to expand. In selected cases bismuth paste injections may procure closure of the sinus. If all else fails, decortication of the lung and dissection of the pleura are necessary.

(199) The Latent Period After Ruptured Spleen.

J. Flolle (*Bull. et Mém. de Soc. de Chirurp.*, February 4, 1920) draws attention to the fact that no signs of hemorrhage may be evidenced after an extensive rupture of the parenchyma of the spleen for hours and even days. In one case the patient remained for 24 hours without any such sign, after which the increasing pulse-rate and abdominal rigidity led to operation. The absence of a rapid thready pulse, pallor, cold extremities, etc., does not signify that the spleen is safe. It is frequently difficult also to percuss out any dullness in the flanks, because of the rigidity or the tympanites present. The practical point is that in all traumas of the left hypochondrium or left thoracic base when the condition of the patient, at first satisfactory, becomes less so, operation is indicated. In doubtful cases the pulse-rate and blood pressure should be taken every two hours.

(200) Intussusception from Benign Tumour of the Intestine.

Murat Willis (*Surg., Gynec. and Obstet.*, June, 1920) details three cases of intussusception due to benign tumour of the intestine. These benign tumours are very rare. King, in 1917, could find in the literature only 118 which had been confirmed microscopically. In the first of these three cases a fibroma of the small intestine caused the intussusception; the other two tumours were adenomata. All the cases occurred in

children ranging in age from 7 to 16. In King's cases only 5 were adenomata and 3 of these caused intussusception. The classical belief is that intussusception results from an attempt of bowel in these cases to get rid of the foreign body. One objection against this hypothesis is that the tumour in some cases is not situated at the apex of the intussusception.

GYNÆCOLOGY AND OBSTETRICS.

(201) Conservation of the Menstrual Function.

W. J. Mayo (*Journ. Amer. Med. Assoc.*, June 19, 1920) discusses the psychical and physical results of operations on the female reproductive organs and in regard to benign neoplasms and inflammatory disease states that the future condition of the patient as related to the operation, psychical as well as physical, must always be borne in mind. He has little faith in the common belief that adhesions which are located by the patient, but cannot be located by the surgeon, are the cause of serious trouble. The ovary controls the menstrual cycle and its internal secretion is of far-reaching importance. The removal of the ovary for inflammatory disease is seldom indicated and it is rarely necessary to remove the organ in tubal pregnancy. He states that it is probable that menstruation itself has an important endocrine function and it is therefore desirable that women during the reproductive period should retain the uterus or part of the body of the uterus, so that menstruation may take place. In women under 35 years hysterectomy for benign myomata is seldom necessary; at 45 years hysterectomy is to be recommended. He quotes a series of 741 myomectomies with a mortality of 0.9%. Following myomectomy 33 of these women raised one child, eleven raised two or more children and fifteen were pregnant at the time of the investigation. Twenty-three married women who were sterile before operation, had one or more children after operation. Nineteen of the 741 patients required secondary operations and the majority of these were for inflammatory disease. He considers that radium must be considered in selected cases as a competitor of hysterectomy, but not in those cases suitable for myomectomy, since radium usually destroys the function of the uterus and ovaries. He recommends total hysterectomy instead of supra-vaginal amputation of the uterus for malignant disease of the cervix and, as two-thirds of the cases of cancer of the cervix are epitheliomata, he does not advise the mere removal of the cervical mucosa, but the whole of the cervix.

(202) Rupture of the Vagina During Labour.

A. C. Palmer (*Proc. Royal Soc. of Med.*, June, 1920) reports two cases of rupture of the vagina during labour. The first patient had previously had eight normal labours. In the ninth, owing to delay during the second stage, forceps had been applied and a still-born infant, weighing about six

kilograms, extracted after a very hard pull. During the third stage bleeding continued in spite of good uterine contraction. The hand was passed into the vagina to remove the placenta; it was found to be lying in the abdominal cavity. It was removed and the patient sent into hospital. On examination the cervico-vaginal junction was found to be torn through for more than three quarters of its circumference. Laparotomy was done at once and the uterus removed as rapidly as possible. The right uterine artery had been torn through, but as it was impossible to locate it, the hæmorrhage was controlled by plugging. The patient made an uninterrupted recovery. The pelvic measurements were above normal. The second patient had had five previous confinements and although she had a generally-contracted pelvis, the first four labours were normal and the fifth instrumental. Labour had been in progress for a day and the pains had been tempestuous. On admission the patient was pale and collapsed. Palpation revealed a mass to the right of the fœtus, which was thought to be a fibroid. The head was jammed into the brim, but not fully engaged. Craniotomy was performed, and the child delivered. It was then discovered that the mass of the right of the fœtus was the contracted uterus. The placenta was removed from the abdominal cavity. When the abdomen was opened, a large T-shaped tear of the posterior fornix was discovered and the uterus was removed as rapidly as possible. The patient recovered after a stormy convalescence. Discussing the paper Eardley Holland said that it was not sufficiently realized how greatly the vagina was stretched and drawn up during obstructed labour. He demonstrated a specimen in which the elongated vagina reached 7 cm. above the symphysis.

(203) The Endocrine Glands in Certain Menstrual Disorders.

Emil Movak states (*Endocrinology*, July-September, 1920) that menstruation is a function of the vegetative rather than the volitional type and the explanation of its mechanism is to be sought chiefly in a study of the functions of certain endocrine glands. Disorders of menstruation are often found with disorders of these glands. There is with menstruation some association with the higher centres, as is shown by the occasional occurrence of menstrual aberrations under the influence of profound psychical disturbances. Ovarian influence is exerted through the blood stream and not through the nerves, as menstruation occurs when the ovaries have been transplanted. The weight of evidence is overwhelmingly in favour of the view that it is the *corpus luteum* which plays the most important part in regard to the menstrual function. But the ovary probably produces more than one hormone, as it influences the development of the sexual characteristics and the general body functions. The internal secretion of the ovary is closely inter-related with that of other endocrine glands, as disease of the latter influences men-

struation. Amenorrhœa associated with obesity is generally recognized as being due to hypopituitarism. Primary or spasmodic dysmenorrhœa is most commonly caused by hypoplasia or defective development of the uterus. The hypoplasia may be classified under three heads: (i.) In the fetal type the body is extremely rudimentary; the cervix is comparatively large. (ii.) In the infantile type the body is not so rudimentary and there is often an associated antelexion. (iii.) In the sub-pubescent type hypoplasia is relatively slight. This want of development of the body of the uterus cannot be due to secretion from the *corpus luteum*, as it does not form till after puberty. There is reason for belief that the earlier development of the uterus is under the influence of other endocrine glands and especially the hypophysis. Functional uterine bleeding is extremely common, especially at the two extremes of menstrual life. Most commonly it takes the form of menorrhagia rather than metrorrhagia and careful examination may show normal pelvic organs. In a very large proportion the endometrium conforms to the type described by Cullen as hyperplasia of the endometrium. This type of endometrium is never found except in association with uterine bleeding. The reverse, of course, is not true, for uterine hæmorrhage is due to many anatomical causes. There is good reason to believe that this characteristic change in the endometrium is due to disturbed function of the ovary and most probably due to hypersecretion of that element which is concerned with the production of normal menstruation.

(204) The Induction of Premature Labour.

Discussing the scope and present results of induction of premature labour, John Phillips (*Lancet*, October 9, 1920) states that the operation originated in England in 1756. He mentions the various methods that have been used from time to time to provoke uterine contractions. Some of them are dangerous and have dropped out of use. He gives a classified table of 161 cases from his private practice. There were seven maternal deaths (4.3%). In his opinion none of them can be attributed to the actual induction. The fetal deaths numbered 24 out of 164 children (14%). With regard to the methods of induction, if time is not an object, one to three bougies inserted well up to the fundus is a relatively safe and certain method. Unfortunately, it has no time limit. The author states that it is a more efficacious method in primiparae than in multiparae; in the latter digital dilatation followed by a small de Ribes's bag is practically certain to start labour and it will be completed within 12 to 24 hours. In primiparae with a long and unsoftened cervix, he recommends the insertion of three laminaria tents, which dilate and soften the cervix and can be followed by the introduction of the bag. When he uses the de Ribes's bag, he always attaches a weight of 450 grammes to the stalk to keep up continuous pressure on the cervix.

THE INFLUENZA EPIDEMIC OF 1919.

(Continued from Page 483.)

The Newcastle Outbreak.

Dr. Robert Dick publishes a short account of the history of the epidemic in the Newcastle district and details the methods adopted to meet the emergency. The first case of influenza with pneumonic symptoms was in a seaman who had arrived in an inter-State boat. He was admitted on February 27, 1919, to the Newcastle Hospital on the assumption that he was suffering from enteric fever. He died three days later. The *post mortem* diagnosis was of influenza. Several other patients in the same ward and some of the members of the staff were infected from this patient. All these patients were removed to an isolation hospital at Waratah. Apparently the disease did not spread very extensively after these patients had been isolated. Dr. Dick records that the total number of notifications was 2,400, but he has reason to conclude that this represents only a portion of the total number of cases of influenza in the district. He estimates that 40% of the total population were infected. In the Newcastle district, as elsewhere, there were two distinct waves of the epidemic. In regard to the type of disease, Dr. Dick, writing from personal experience of the disease in England and France, records that it did not differ in any respect from the epidemic disease of the other side of the world.

The total number of deaths registered as being due to influenza or its complications was 494. At the Waratah Hospital the mortality rate was 10.9%; at the Wallaseid Emergency Hospital it was 8.9%; at the Maitland Emergency Hospital it was 18.6%; at the Kurri Kurri Emergency Hospital it was 7.4%; and at the Cessnock Emergency Hospital, where only 101 patients were treated, it was 20.8%. It appears that 66% of the deaths were of patients between 20 and 45 years of age.

Dr. Dick states that after it had been found that quarantine restrictions were of no avail, the chief endeavour of the Department was directed towards the provision of nursing assistance in the homes of patients and the supply of medicines, articles of invalid diet, blankets and clothing. He expresses the opinion that maritime quarantine, inoculation, masking, the closure of theatres, picture shows, etc., the control of train and other traffic and similar measures failed to prevent the entrance of the disease into the State and had practically no appreciable effect in limiting its spread. The enforcement of many of the restrictions had few compensating advantages. He states that while it is obviously unwise for people to frequent crowded places during the prevalence of an infectious disease, it is a totally different matter to prohibit every form of meeting and to restrict travel unnecessarily. Dr. Dick admits that the severity of the attacks was greater among the uninoculated than among the inoculated. He claims, however, that there is no evidence that the disease attacked the uninoculated more frequently than it attacked the inoculated. He holds the opinion strongly that the adoption of the restrictions induced the public to regard the disease as a very fear-some thing. In many instances the neighbours were so scared that persons who had contracted the disease, were left without any assistance whatsoever. He recommends for future emergencies of this kind that adequate means of transport for patients and properly equipped hospitals for their isolation should be established, that there should be an ample supply of trained nurses for hospital and home duties, that a system of patrol should be provided to ascertain where relief is needed, that soup kitchens should be established in convenient centres and that soup and other articles of diet should be distributed among those ill with the disease. He also advocates the institution of depôts for the gratuitous distribution of medicines, blankets and clothing among the necessitous. His last recommendation is that medical practitioners should be available for rendering medical aid to all patients requiring their attendance.

A Statistical Study.

Mr. H. A. Smith, the Government Statistician, has dealt with the figures supplied to him in relation to salient facts and has endeavoured to solve some of the epidemiological problems by statistical methods. From the evidence avail-

able, he finds that the highest death-rates corresponded to the greatest density of population. His second conclusion is that the mortality was severer among the males than among the females and that this difference became less marked as the epidemic progressed. In the last place, he found that the death-rate was lowest among young children. It was practically the same for both sexes at school age. The highest death-rates were in males "of working ages." From the figures and curves published, it appears that the highest death-rate occurred among males between the ages of 25 and 40. A comparison is made between the epidemics of 1891 and 1919. In the former epidemic the mortality rose gradually through the age groups from childhood and reached the highest point in old age. In the 1919 epidemic the highest point was reached in the age group 30-35. Following this there was a decline and a slight rise in the case of males from 60 years onwards and in the case of males from 55. We regret that space does not admit of a more detailed summary of this statistical study.

The Pathology and Bacteriology of Influenza.

The last part of the report is an article 26 pages in length, dealing with the pathological, bacteriological and aetiological investigations by Dr. (now Professor) J. B. Cleland. This article is divided into six chapters, in addition to an introduction. In the first chapter Dr. Cleland gives a very detailed account of the macroscopical appearances of the lungs. He describes the general appearances of the lungs, the consolidated areas and the haemorrhagic and infarct-like areas. His description coincides in the main with those of previous observers. In the second chapter he deals with the microscopical appearances and gives an account of early lesions, the changes found in what he describes as the second stage and the late lesions. In the second stage he finds infiltration with polymorpho-nuclear leucocytes together with changes in the extravasated red cells and some shedding of the alveolar cells. In connexion with these appearances, he endeavours to find some pathological explanation. In the late stages considerable variation was observed both in regard to the extent of organization of the pulmonary tissue and also in regard to the degree of the pathological changes. He gives information concerning the frequency with which alveolar and catarrhal cells occurred; he gives similar information concerning the "glassy-looking" exudate, the granular exudate, the haemorrhagic areas, the fibrin plugs and the organization. He also gives the number of specimens of lungs in which bacteria were detected.

Dr. Cleland indulges in a curious speculation in connexion with the microscopical appearances of the lungs after death from pulmonary complications of influenza. Assuming that the blood of an average man contains 37,500 million leucocytes of all descriptions, of which 70% are polymorpho-nuclear leucocytes, he endeavours to arrive at an estimate of the number of leucocytes that may be locked up in the lungs. He measured several alveoli which were filled with leucocytes and he counted the number of these white cells lying in the various diameters of the alveoli. By making a number of calculations and measurements of this kind, he fixed the average density of the leucocytes in the alveoli. From this he estimates the number of cells contained in each cubic centimetre of alveolar space and, assuming that the volume of an adult male's lungs is 1,000 cubic centimetres, of which 500 c.cm. are occupied by bronchi, bronchioles and alveolar walls and 250 c.cm. by unaffected alveoli, he arrives at the conclusion that in the remaining 250 c.cm. there are between 250,000 million and 400,000 million leucocytes locked up in the lungs. Dr. Cleland apparently wished to show that the influenza patient was subjected to an enormous drain by the production and imprisonment of leucocytes corresponding to a volume of blood from seven to eleven times that ordinarily found in the circulation. It appears to us that the estimation is too hazardous to be accepted. The errors are incalculable.

Dr. Cleland devotes the third part of his report to the results of his bacteriological examinations. He deals separately with the various organs found and isolated in the sputum, lungs and other tissues. In regard to the pneumococci, he gives information concerning the differentiation between the inulin-positive and the inulin-negative strains. Some work was carried out with pneumococcal antisera obtained from the Rockefeller Institute. He comes to the con-

clusion that the majority of the strains associated with influenza in Australia belonged to type IV. A few typical and atypical forms of types I. and II. were recognized, while type III. (*Pneumococcus mucosus*) was apparently isolated from ten patients. He also deals with the streptococci, staphylococci, *Bacillus influenzae*, diphtheroid organisms, etc., present in these cases. In the next place, he gives information concerning the association of the various organisms one with another and tabulates the various organisms found in different parts of the lung. He indulges in an estimation of the total number of pneumococci present in a single lung.

The State Vaccine.

The question of vaccines is discussed. It appears that the bacteria employed in the preparation of the State vaccine was derived from cultures provided by the Federal Quarantine Department, by Professor D. A. Welsh and by the Director of the Commonwealth Serum Institute. Later, new strains were added, presumably from patients suffering from the disease in New South Wales. There were 170 pneumococcal cultures from 97 different sources, 27 streptococcal cultures from 20 sources, about 30 influenza bacillus cultures and smaller numbers of cultures of *Staphylococcus aureus* and *Micrococcus catarrhalis*. The total amount of vaccine issued was 350,000 c.c.m.. At first sterility was gained by the addition of carbolic acid. Later it was thought that some of the bacteria might have become carbolic acid-fast. It was therefore decided to heat the carbolized vaccines for one hour to 55° C.. Dr. Cleland realized that the heating may have had an effect on the potency of the vaccine. He refers to the fact that in addition to the Commonwealth and the State vaccines employed, there were several vaccines produced by private persons in general use. As has already been pointed out, it was impossible to ascertain the names of those persons who were inoculated with each kind of vaccine.

Dr. Cleland is convinced that the inoculations proved beneficial in cases of chronic rheumatism and other complaints. He considers that the effect was not produced by suggestion, because the persons whose pain was relieved, found it out on their own account. He suggests that the action may have been due to the foreign protein or even to the carbolic acid. In regard to the explanation of the diminution in mortality among patients suffering from influenza, he suggests that it is an open question whether specific protective bodies were produced by the inoculations or whether the result was due to some more general reaction.

The Aetiology of Influenza.

A separate chapter is devoted to a discussion on the nature of the possible agents responsible for the primary infective process and for the pulmonary lesions. Dr. Cleland puts forward nine arguments in favour of the primary agent being a filter-passing organism and three arguments in favour of Pfeiffer's bacillus being the responsible virus. The majority of these arguments are based on assumed analogies. He is prepared to adopt the filter-passing hypothesis, notwithstanding that fact that there is no definite evidence at present in its favour.

In the next place, he discusses at some length the question whether the pulmonary lesions are due to the primary infecting agent or to secondary invaders. Again, arguing by analogy, he comes to the conclusion that the pulmonary lesions are part and parcel of the primary infection and that during the early stages, at all events, Pfeiffer's bacillus and other secondary invaders play no part. He suggests that the essential pulmonary lesions, including exudates and hemorrhages, render the lungs suitable for the growth of other bacteria. He suggests the possibility of a rapid passage of highly virulent secondary invaders from patient to patient and speculates concerning the damaging action of organisms usually saprophytic in patients whose lungs are severely damaged as a result of the influenza infection. He is careful, however, in refraining from any expression of definite opinion.

The next chapter is a record of practically negative results from experiments on animals. Monkeys, sheep, guinea-pigs and rabbits were used. Endeavours were made to infect these animals with the blood of patients, with material from infected lungs and with sputum, salivary secretion and the mucus from the throat. In no case was a

definite illness analogous to influenza produced. Dr. Cleland suggests that monkeys may be immune to the disease.

Some Epidemiological Conditions.

The last chapter is concerned with masking as a protective measure, with the means of exit of the virus and with some points in the epidemiology of influenza. The arguments on masking are largely, if not wholly, hypothetical. Dr. Cleland would endeavour to protect persons exposed to infection by making them wear a gauze mask applied on a frame-work over the mouth and nose and a second loose gauze apron suspended in front of the mask.

Dr. Cleland gives some reasons for assuming that the virus escapes from patients to infect other persons through the saliva sprayed in the act of speaking, coughing, sneezing or clearing the throat. He is satisfied that the inhalation of minute particles into the alveoli of the lung actually occurs.

Finally, he recognizes a varying degree of susceptibility to infection and a high degree of resistance in between one third and a half of the community. He states that there appears to be evidence that a previous attack affords relative protection against subsequent attacks of influenza. He endeavours to explain the rapid spread of the disease by assuming that the virus has access to a large number of susceptible persons. He likens the continuation of the epidemic to a bush fire, in that both are dependent on the presence of inflammable material. He discusses the waxing and waning of the virulence of the virus; he claims that, while increasing virulence would tend to cause the disease to die out, a decreasing virulence would tend, within limits, to maintain the disease. He states that climate and season have little effect upon the infectiousness of the disease or on the prevalence of lung complications.

British Medical Association News.

MEDICO-POLITICAL.

An extraordinary general meeting of the New South Wales Branch was held at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, on December 10, 1920, Dr. C. Bickerton, O.B.E., the President, in the chair.

Dr. W. H. Crago, the Honorary Treasurer, moved on behalf of the Council:

That on and after January 1, 1921, the annual subscription of members of the Branch, except as hereinafter provided, shall be five pounds five shillings. Provided as follows:

- (a) A member admitted on or after July 1 in any year shall pay half his current subscription for that year.
- (b) In the case of a member admitted before the expiration of three years from the date of his registration as a legally qualified medical practitioner under any statute or otherwise, the annual subscription shall be three pounds three shillings until December 31 next occurring after the expiration of the period of three years from the date of such registration.
- (c) A member who is over 70 years of age or who shall have permanently retired from medical practice, either in an official or any other capacity, shall pay three pounds three shillings, instead of five pounds five shillings.
- (d) A member who shall have been registered as a legally qualified medical practitioner and who is a permanent whole-time member of the Public Service of the Commonwealth (including the Naval and Military Services) or the State (including the New South Wales Government Railways and the University of Sydney) shall pay four pounds four shillings, instead of five pounds five shillings.

He pointed out that the present subscription rates had been in force for seven years since January 1, 1914. If they compared the work of the Branch at the present time with that conducted in 1914, they would find an enormous increase in its activities. The cost of printing, postage, salaries and everything else had gone up considerably. The present necessity, however, for raising the annual subscrip-

tion had arisen from the action of the British Medical Association in putting up the subscription of overseas members from 25s. to 42s. The Council in London had been faced with the necessity of augmenting its revenue if the activities of the Association were not to be curtailed. It had been decided at the annual representative meeting to increase the subscriptions for members resident in the United Kingdom to £3 3s. and for overseas members to £2 2s. It was impossible for the Branch to pay this increased amount without passing it on to the members. If they desired to retain their connexion with the British Medical Association they were forced to increase the subscription, as set out in the motion. He felt very strongly the wisdom of retaining their connexion with it, as such a world-wide Association could speak with greater authority than a merely local association.

Dr. Crago had some hope that at the conference of the Council and representatives of the Overseas Branches of the British Medical Association, to be held in 1921, the Council would see the wisdom of returning to the old subscription rate for overseas members, in order to retain their membership. Dr. Crago also referred to the fact that the Federal Committee would require the Branches to pay the full amount of the contribution provided by the Regulations of 2s. per member. In the past, only portion of this contribution had been collected. In the last place, he called the attention of members to a recent alteration of the Articles of Association of the British Medical Association in regard to the non-payment of subscriptions. In future, the membership of the British Medical Association would lapse on the last day of the year, if the annual subscription had not been paid by that date.

Dr. George Armstrong seconded the motion. The motion was carried.

An extraordinary general meeting of the Western Australian Branch was held at the Perth Public Hospital on October 27, 1920, Dr. A. T. White, C.M.G., V.D., the President, in the chair.

Arising out of a paper read by Dr. G. W. Barber, C.B., C.M.G., D.S.O., entitled "The Application of the Lessons Learned During the War to Civil Practice," it was resolved on the motion of Dr. J. J. Holland, seconded by Dr. H. Gill, that the Government be asked to provide a liberal subsidy toward the establishment of ambulances in Perth and elsewhere if needed.

Dr. F. A. Hadley proposed that a committee should be appointed to deal with the various matters arising out of Dr. Barber's paper. He suggested that this committee should be empowered to co-opt both medical practitioners and laymen. The proposal was seconded by Dr. H. H. Field-Martell and was carried. On the suggestion of Dr. F. A. Hadley, supported by Dr. E. A. Officer, the President, the Vice-President, the Honorary Treasurer and the Honorary Secretary were appointed the members of the committee.

Dr. E. A. Officer moved that steps should be taken to increase the rates payable by friendly society lodge members to the lodge surgeons within the metropolitan area to 26s. per member per annum. The motion was seconded by Dr. H. Gill and was carried.

Dr. Officer then moved that the Honorary Secretary be instructed to notify the Secretary of the Friendly Societies' Association that the Branch had resolved to request the lodges to agree to an increase of the rates for medical attendance to a minimum of 26s. in the metropolitan area from the beginning of the first quarter of 1921 and to request him to communicate the fact to the Grand Secretaries of all the lodges. This proposal was accepted.

Dr. H. Gill moved and Dr. H. H. Field-Martell seconded a motion to the effect that the Honorary Secretary be instructed to notify all members concerned in the event of the request being accepted by the lodges. In the event of the request being refused, the matter should be referred to the Council. The motion was carried.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on December 6, 1920, at University Chambers, Phillip Street, Sydney.

A discussion took place on the financial position of the University, in view of the difficulties which have arisen through increase in prices of all commodities and the increased cost of printing, stationery and other supplies. The application of the rule recently made for the advancement of wages and salaries involves the University in an additional annual expenditure of about £1,700, while the demands of different departments for the appointment of additional teachers and for the supply of adequate equipment for teaching purposes have had to be modified or refused. After full consideration it was decided to increase the fees payable by students by an amount approximating 50%.

A tender was accepted on the recommendation of the University Building Committee for the erection of additional accommodation for the Department of Organic and Applied Chemistry, including a large lecture-room, which will ultimately revert to the Faculty of Arts and become incorporated in the buildings forming the main quadrangle.

It was resolved to nominate Associate Professor H. T. Lovell as a member of the Bursary Board during the absence of Professor W. J. Woodhouse and Acting Professor E. M. Wellish in the place of Professor Carslaw as a member of the Board of Examiners for Leaving Certificates.

Authority was given for the holding of a course during the long vacation in practical pathology for the benefit of students of the fourth year in medicine. This course is necessitated by the difficulty in giving practical instruction in pathology and bacteriology to the large number of students now attending in that year.

Obituary.

JOSEPH ALOYSIUS BEATTIE.

The friends, changelings and patients of Joseph Aloysius Beattie learned with intense regret one day in July, 1915, that this brilliant Irish doctor had been suddenly seized with a cerebral hemorrhage. His recovery was partial. There was a persistent right hemiplegia and a considerable degree of aphasia, but much of his old brilliance of intellect remained for a few months. Then, to his own distress and to the intense sorrow of his intimate friends, that brilliance began to fail. On November 20, 1920, the chapter closed.

He was born at Athlone, in Ireland, 73 years ago. His medical education at Trinity College, Dublin, was characterized by his distinguished achievements in anatomy and pathology. In 1877 and 1878 he secured the diplomas of the Irish colleges. Immediately after qualifying he set forth in the old sailing ship *La Hogue*, in charge of immigrants for Sydney. On his arrival, the late Dr. Manning, then Superintendent of the Gladesville Asylum, obtained an appointment for him in the Lunacy Service and received him as assistant in his own institution. Notwithstanding the great differences of temperament, a close friendship sprang up between these two men. After a short time he was transferred to the Parramatta Asylum to take charge of that institution, in succession to the late Dr. Scholes. His administration was characterized by his very free and humanitarian methods. It is stated that soon after his arrival a patient was seen confined in a cage in the open during the day, violent, savage, unkempt and almost naked. A short time afterwards this same patient was seen doing clerical work in the Superintendent's office. About the year 1880 or 1881 he was transferred from the Lunacy Department to the Department of Public Health. Late in May of 1881 a severe epidemic of small-pox broke out. The Public Health authorities erected an isolation hospital, which they named the Little Bay Sanatorium, and Beattie was placed in charge. He did very valuable work in connexion with the establishment of this institution. For three quarters of a year he administered this hospital with great ability and success. It is interesting to note that subsequently the Little Bay Sanatorium became the Coast Hospital. Toward the end of 1882 he was required to inaugurate on behalf of the Orient Company a scheme for the shipment of immigrants. He took an especial delight in the duty of leading and guiding a large variety of human elements to their different destinations. He handled upwards of 6,000 immigrants in this way in the course of five trips. The

service was stopped in October, 1886. The Department then placed him in charge of the State Asylum and Hospital at Liverpool, where he worked until his retirement in 1915, a period of 29 years. He was inclined to think that he had been shelved by this appointment, but as the right of private practice was granted, he was given, perhaps, a better opportunity of displaying his manifold talents than if he had been retained in full-time departmental service. He took a very large interest in the care and treatment of tubercular patients and worked strenuously and unceasingly on their behalf. With others, he pressed for the establishment of the Sanatorium at Waterfall, the institution of which may be regarded as one of his important achievements. In 1901 he journeyed to London as the New South Wales representative at the International Congress on Tuberculosis.

He was a remarkable man. His friends recognized his faults, but they also recognized his numerous good qualities. He had a remarkable ability as an organizer, notwithstanding the fact that he paid but little attention to detail. In his practice he was shrewd and impulsive, compelling and kind and most humane. He was gifted with literary ability, a ready wit and facility in speech. As a companion he had few equals; the brilliancy of his conversation was a by-word. To those who knew him well, he was generous, large-hearted, benevolent and beneficent. Many of his good works will not be forgotten while their recipients live.

THE COMMONWEALTH SERUM LABORATORIES' VACCINES.

We have been asked to insert the following statement from the Director of Quarantine:

With reference to the letter of "G.P." relating to Commonwealth vaccines which appears in our issue of December 4 and in which complaint is made by the writer as follows:

- (a) that his order for vaccine given to a wholesale house in Sydney was not fulfilled for four days;
- (b) that the vaccine, when supplied, was not of the strength ordered; and
- (c) that a vaccine which was practically out of date was supplied.

The position actually is that the Serum Laboratories accept from recognized wholesale chemists and druggists the return of products one month before the date of expiry shown on the packages and, apart from the failure of the suppliers to take advantage of this condition, there is no reason why any medical practitioner in the Commonwealth should have been supplied with time-expired products. The present arrangements are recognized by the pharmaceutical trade to be eminently suitable in this regard and your correspondent will doubtless be interested to know the real position.

Correspondence.

SPECIALISTS AND SPECIALTIES.

Sir: Recently you had a leading article in which the writer maintained that midwifery and gynaecology were specialties, while he asserts that urology and venereal disease were not. His logic, if any was present, is hard to follow. Does he seriously assert that these two highly technical branches of medicine can be acquired without a very great deal of patient study and experience and that they can be efficiently practised without a very large and expensive armamentarium?

I can assure him that I have personally seen a great many competent medical men go through a long and patient course of instruction in both subjects and have heard more than one of them remark that when he entered on the course he had no idea what a lot there was in it; also that it was clear that these subjects were beyond the scope of the general practitioner. A great many people think that to-day, even if your writer does not, Has that writer ever passed a urethral catheter? Can he work and operate with a good modern urethroscope. Can he quote off-hand the calibration of various portions of the male

urethra? Can he detect and deal with a case of chronic Cowperitis or perform Belfield's operation of vasostomy—to mention only a few common cases the urologist is called upon to deal with?

Is it not time we did away with the obsolete old shibboleths of the profession which only block the way of progressive men and act detrimentally on the general public? Surely it is, or we should not see the progress of such organizations as the Medico-Political Union in England, an association of the younger men, which is probably destined to wipe out the older associations in the not far distant future.

One of the manifestations of the new school of thought is that which demand diplomas for special branches, such as venereal disease, urology, etc., and it seems only fair to those men who expend time and money in acquiring special knowledge and experience in special subjects, as well as simple justice to the public, that facilities for obtaining such diplomas should be provided.

Yours, etc.,

T. S. GREENAWAY.

The "V.D." Clinic, Brisbane,
December 7, 1920.

[It has been said that it is the prerogative of the young to be infallible. The object of the article "Specialists and Specialties" was to draw attention to the tendency conceived in commercialism and born in an age of advertising, to multiply the recognized specialties in medicine. Dr. Greenaway confuses specialties with particular branches of medical practice demanding years of experience before expertness can be attained. Every medical student receives or should receive training in technique to enable him to carry out the manipulations needed in the diagnosis and treatment of diseases of the uro-genital organs. Expertness is a matter of continued experience.—Ed.]

SPECIALIZATION WITHIN THE BRITISH MEDICAL ASSOCIATION.

Sir: May I very briefly draw attention to the tendency manifested by the British Medical Association in the direction of specialization, a tendency which, unless correlated with a wider outlook, must seriously impair its efficiency. I hear criticisms from thoughtful medical men that the British Medical Association is becoming a trades union and a political organization and that scientific work is becoming relegated to the background. The reply is, of course, that it is quite necessary to have a body which represents the interests of the profession and is prepared to deal with them publicly. If the methods previously adopted do not always command approval, it rests with the members to rectify them. It is, however, obvious that in Melbourne, at all events, the profession is divided into groups which discuss the special technical problems with which they are concerned. This is a very necessary and inevitable change. The danger is, however, that men, as President Wilson put it, "may reach a position in which they see this great and interesting world only through the medium of their own speciality."

The remedies in my judgement are those adopted by the American Medical Association, which divides itself so far as administration and legislation are concerned into a body of men elected to take charge of the general business and interests of the profession and another body to control the scientific business. If that were done and the energies of the scientific body rightly directed, I can imagine numberless subjects which must be of general interest to all medical men. Meetings arranged for this purpose would re-unite the various sectional groups. In my judgement, it is a very bad business for society and for any man, when he becomes simply and solely a specialist. I venture to submit these considerations to members of the British Medical Association in order that some solution of the difficulty may be found before the cleavage becomes still more accentuated.

Yours, etc.,

JAMES W. HARRETT.

(Undated.)

Books Received.

AN ANTHOGRAPHY OF THE EUCALYPTS, by Russell Grimwade, B.Sc.; 1920. Sydney: Angus & Robertson, Ltd.; Demy 4to., pp. 162, with 79 plates. Price, £2 12s. 6d.
LITTLE RAGGED BLOSSOM, or More About Snugglespot and Cuddlepie, by May Gibbs; 1920. Sydney: Angus & Robertson, Ltd.; Crown 4to., pp. 98, with over 40 illustrations. Price, 6s.
THE AMERICAN UNIVERSITY: An Australian View, by Professor E. R. Holmes; 1920. Sydney: Angus & Robertson, Ltd.; Crown 8vo., pp. 242. Price, 7s. 6d.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

The undermentioned have been registered, under the provisions of *The Medical Act, 1912 and 1915*, as duly qualified medical practitioners:—

Gaha, John Francis, M.B., Bae. Surg., 1919, Nat. Univ., Ireland; M.R.C.S., Eng., L.R.C.P., Lond., 1919; D.P.H., Trinity College, Dublin, 1920; St. Leonards.
 Wilkinson, Jeffrey Wilmott, M.B., Bae. Surg., 1914, Univ. Melbourne. *In absentia*. Albury.

QUEENSLAND.

The undermentioned have been registered, under the provisions of *The Medical Act of 1867*, as duly qualified medical practitioners:—

Clarke, Burnett Leslie Woodburn, M.B., B.S., Univ. Melb., 1920, Springsure.
 Greenaway, Thomas Sacheverell, M.R.C.S., Eng., L.R.C.P., Lond., 1916, Brisbane.
 Haynes, Raymond James, M.B., Univ. Syd., 1915, Lowood.
 Rivett, Edward William, M.B., Univ. Syd., 1920, Brisbane.

Medical Appointments.

Dr. T. A. McLean (B.M.A.) has been appointed a Trustee for Traralgon Public Cemetery, Victoria.

For a period of three months on probation, Dr. C. H. Johnson (B.M.A.) has been appointed a Health Officer in Class "A" of the Professional Division of the Public Service of Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiii.
 Department of Public Instruction, Victoria: Two Medical Officers.

Municipality of Lilydale, Tasmania: Medical Practitioner.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Institutes or Medical Dispensaries. Manchester Unity Independent Order of Oddfellows. Ancient Order of Foresters. Hibernian Australian Catholic Benefit Society. Grand United Order of Free Gardeners. Sons of Temperance. Order of St. Andrew. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

- Dec. 21.—N.S.W. Branch, B.M.A.; Medical Politics Committee; Organization and Science Committee.
 Dec. 30.—S. Aust. Branch, B.M.A.
 Dec. 30.—Q. Branch, B.M.A., Council.
 Jan. 4.—N.S.W. Branch, B.M.A., Council (Quarterly).
 Jan. 11.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
 Jan. 13.—Vic. Branch, B.M.A., Council.
 Jan. 14.—S. Aust. Branch, Council.
 Jan. 18.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
 Jan. 20.—Western Med. Assoc. (N.S.W.), Blayney.
 Jan. 26.—Vic. Branch, B.M.A., Council.
 Jan. 27.—S. Aust. Branch, B.M.A.
 Jan. 27.—Q. Branch, B.M.A., Council.
 Feb. 1.—Federal Committee of the B.M.A. in Australia.
 Feb. 2.—Vic. Branch, B.M.A.
 Feb. 4.—Q. Branch, B.M.A.
 Feb. 8.—N.S.W. Branch, B.M.A., Ethics Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.
 Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.
 All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: B. 4635.)